

THE HIGH COURT
COMMERCIAL

Record No. 2016/4809P

BETWEEN

THE DATA PROTECTION COMMISSIONER

Plaintiff

-and-

FACEBOOK IRELAND LIMITED AND MAXIMILLIAN SCHREMS

Defendants

AFFIDAVIT OF THOMAS BOUÉ

EXHIBIT "TB1"

Referred to in the Affidavit of Thomas Boué sworn on November 2016



Thomas Boué

Vu pour la légalisation des signatures
de Thomas BOUÉ
apposées ci-dessus.

Notary Public

~~Pablo DE DONCKER~~
Notaire
Rue du Vieux Marché aux Grains, 51
1000 Bruxelles

17 NOVEMBER 2016

Date

William Fry
Solicitors
2 Grand Canal Square
Dublin 2
024205.0001.DCU/JFM/CO'K

List of BSA's Members

Adobe Systems, Inc.

ANSYS, Inc.

Apple Inc.

Autodesk, Inc.

Bentley Systems, Inc.

CA Technologies

CNC Software, Inc.

DataStax, Inc.

Dell Inc.

IBM Corporation

Intuit Inc.

Microsoft Corporation

Minitab Inc.

Oracle

salesforce.com

SAS Institute

Siemens PLM Software Inc.

Splunk

Symantec Corporation

Tekla

The MathWorks, Inc.

Trend Micro

Workday

883400

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF CONSUMER AND REGULATORY AFFAIRS
BUSINESS REGULATION ADMINISTRATION



CERTIFICATE

THIS IS TO CERTIFY that all applicable provisions of the DISTRICT OF COLUMBIA NONPROFIT CORPORATION ACT have been complied with and accordingly, this CERTIFICATE of INCORPORATION is hereby issued to BSA BUSINESS SOFTWARE ASSOCIATION, INC.

as of JULY 14TH, 1988 .

Denald G. Murray
Director

Henry C. Lee, III
Administrator
Business Regulation Administration

Vandy L. Jamison, Jr.
Assistant Vandy L. Jamison, Jr.
Superintendent of Corporations
Corporations Division

Marion Barry, Jr.
Mayor

ARTICLES OF INCORPORATION

OF

BSA BUSINESS SOFTWARE ASSOCIATION, INC.

To: Department of Consumer and Regulatory Affairs
Washington, D.C. 20001

We, the undersigned natural persons of the age of eighteen years or more, acting as incorporators of a corporation under the NON-PROFIT CORPORATION ACT (D. C. Code 1981 edition, Title 29, Chapter 5), adopt the following Articles of Incorporation:

FIRST: The name of the corporation is BSA Business Software Association, Inc.

SECOND: The period of duration is perpetual.

THIRD: The purposes for which the corporation is organized are not for profit and are

(a) to advance free and open trade in legitimate business software by combating piracy, promoting strong intellectual property laws, and reducing trade barriers, through means including but not limited to (i) aiding the enforcement of relevant laws by working with local governments and law enforcement agencies, instituting private civil actions, publicizing such actions, and conducting and coordinating educational campaigns to improve the attitude of users, and (ii) supporting the enactment of strong intellectual property laws by working with U.S. and foreign governments and urging them to combat piracy, reduce trade barriers, and maintain high intellectual property standards;

(b) to make members aware of other government--related matters that may have a significant impact on the members, and to act on such matters as the members determine;

(c) to engage in such other activities as are necessary and proper to further the aforesaid purposes and to advance in every lawful manner the interests of the business software industry, its employees, and the public.

FOURTH: The corporation shall have members.

FILED

JUL 14 1988

BY: LLS

FIFTH: There may be one or more classes of members. The designation of each class of members, the manner of election or appointment, and the qualifications and rights, including voting rights, of the members of each class shall be set forth in the bylaws.

SIXTH: The affairs of the corporation shall be managed by a Board of Directors. The number of directors and the manner in which directors shall be elected or appointed shall be set forth in the bylaws, except that the initial Board of Directors is named herein.

SEVENTH: The corporation shall have such powers as are provided by law and these articles of incorporation. Notwithstanding any other provision hereof, the corporation shall not engage in any activities that are inconsistent with the qualification of the corporation as a business league exempt from federal income tax in accordance with the provisions of the Internal Revenue Code of 1954 or any successor thereto, and no part of the net earnings of the corporation shall inure to the benefit of any private individual.

EIGHTH: The address, including street and number, of the corporation's initial registered office is CT Corporation System, 1030 - 15th Street, N.W., Washington, D.C. 20005, and the name of its initial registered agent at such address is CT Corporation System.

NINTH: The number of directors constituting the initial board of directors is six and the names and addresses, including street and number, of the persons who are to serve as the initial directors until the first annual meeting or until their successors be elected and qualified are:

NAME	ADDRESS
Ms. Gwen Glessner	Aldus Corporation Suite 200 411 First Avenue South Seattle, WA 98104
Thomas M. Lemberg, Esq.	Lotus Development Corp. 55 Cambridge Parkway Cambridge, MA 02142
William H. Neukom, Esq.	Microsoft Corporation 16011 Northeast 36th Way Box 97017 Redmond, WA 98073-9717
Christopher Record, Esq.	Autodesk, Inc. 2320 Marinship Way Sausalito, CA 94965

R. Duff Thompson, Esq.

WordPerfect Corporation
1555 North Technology Way
Orem, Utah 84057

Stanley P. Witkow, Esq.

Ashton-Tate Corporation
20101 Hamilton Avenue
Torrance, CA 90502

TENTH: The name and address, including street and number, of each incorporator is:

NAME	ADDRESS
<u>JANIS LARUE</u>	<u>11 Linnaean St Cambridge MA 02138</u>
<u>Christine Ciotti</u>	<u>17 Washington Street, Newton MA.</u>
<u>Irwin N. Barnes</u>	<u>501 Beacon St., Newton, MA 02158</u>

J Larue
Christy Ciotti
Irwin N. Barnes
 Incorporators

Date July 13, 1988

Commonwealth of)
MASSACHUSETTS) SS
MIDDLESEX)

I, M. Geraldine Atkins, a Notary Public, hereby certify that on the 13th day of JULY, 1988, personally appeared before me JANIS LARUE, CHRISTINE CIOTTI and Irwin N. Barnes, who being first duly sworn, declared that they signed the foregoing document as incorporators, and that the statements therein contained are true.

(Seal)

M. Geraldine Atkins
 Notary Public
 M. GERALDINE ATKINS
 My Commission Expires: 8-25-89

DISTRICT OF COLUMBIA

**DEPARTMENT OF CONSUMER
AND REGULATORY AFFAIRS**

I hereby certify that this is a true
and complete copy of the document
filed in this office, the Corporations
Division of the Business Regulation
Administration, and that this docu-
ment was admitted to record in
File # 883400

Date of Certification 3-16 2001

Act. Asst.

Superintendent of Corporations

William L. Allen

Standard Contract Clauses Survey

Irish courts are proceeding with a determination on the use of standard contractual clauses to transfer data between the EU and the United States. The case, *Data Protection Commissioner v. Facebook Ireland and Maximilian Schrems*, will be heard in early February and briefs will be filed in November and December.

The Irish courts have granted leave to four groups to participate as friends of the court and file amicus briefs.

BSA | The Software Alliance has been accepted as one of the amici. BSA will use this opportunity to assist the Court by presenting information and submissions in relation to the use of the standard clauses by industry.

In order to ensure the Court has an accurate picture of the perspective of our members and industry more broadly, our submissions would be greatly bolstered by information from companies regarding the use of standard clauses for data transfers from Europe to the United States and other countries. Included below are the questions on which we would invite your input. **Please note that we will keep this information confidential and present it to the Court only in aggregated form without attribution to particular companies.**

Please note that there is a possibility that Mr. Schrems may seek access to the underlying survey responses in the context of the Irish litigation as part of discovery.

About You

1. In what sector(s) is your company active/has a commercial interest?

- Tech industry
- Non-tech industry

2. If you have selected “non-tech industry”, please specify the sector:

3. Are you established in Europe?

Yes

No

4. How many people are employed by your company?

Fewer than 250

250-1,000

More than 1,000

Questions for Companies on Standard Contract Clauses

5. Does your company rely on standard contract clauses to transfer data from the EU to the United States?

Yes

No

6. Does your company rely on standard contract clauses to transfer data from the EU to countries other than the United States?

Yes

No

7. If the answer to 2 is yes, which countries / regions?

8. Does your company rely on standard contract clauses to:

- Transfer data within your company/group
- Transfer and/or receive data from your customers
- Transfer and/or receive data from any other third parties

9. Which standard contract clauses do you use?

- Controller-to-controller transfer clauses
- Controller-to-processor transfer clauses

10. Optional question:

Describe methods your company uses to ensure that third-party controllers or processors observe the terms of standard contract clauses?

11. Has your company's use of standard contract clauses ever been the subject of an audit by an EU Member State data protection authority?

- Yes
- No

12. To what extent do you rely on standard contract clauses as opposed to other legal bases for data transfer – please quantify approximately (in %).

- 100%
- More than 50%
- Less than 50%

13. If less than 100%, which other legal bases in addition to standard contract clauses do you use for transferring data from the EU?

- Privacy Shield (for transfers to the United States)
- Binding Corporate Rules
- Consent
- Other (please specify): _____ *

14. If standard clauses were no longer valid for transfers from the EU to the U.S. or other non-EU countries, would this be a significant impediment for your company

a. For the U.S. market?

- Not Significant Somewhat Significant Very Significant

b. For markets other than the U.S.?

- Not Significant Somewhat Significant Very Significant

c. Is the EU-U.S. Privacy Shield a useful alternative to standard clauses for transfers to the U.S.?

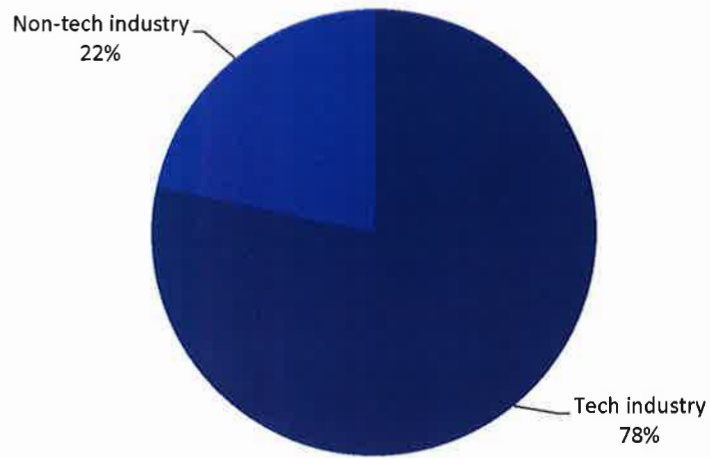
- Yes
- No

Thank you for taking our survey.

Standard Contract Clauses Survey— Results

This survey was conducted between September 8, 2016 and October 17, 2016.

1. In what sector(s) is your company active/has a commercial interest?

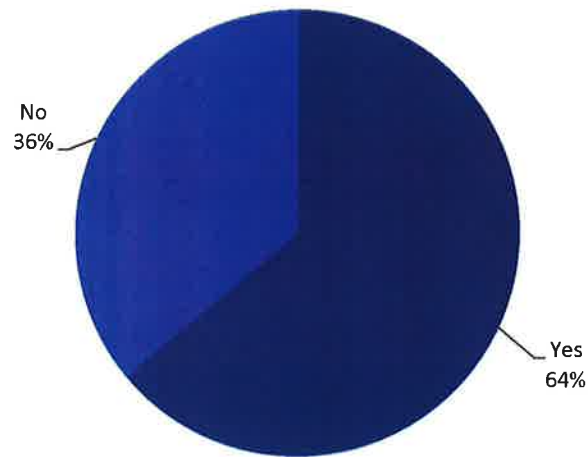


Value	Percent	Count
Tech industry	78.3%	47
Non-tech industry	21.7%	13
	Total	60

2. If you have selected “non-tech industry”, please specify the sector:

Count	Response
2	Reinsurance
1	Banking
1	Information Services & Financial Services
1	Manufacturing
1	Petrochemical
1	all sector, since software can be sold to indistinct end user
1	conglomerate
1	life sciences
1	manufacturing (AG)
1	manufacturing
1	Insurance

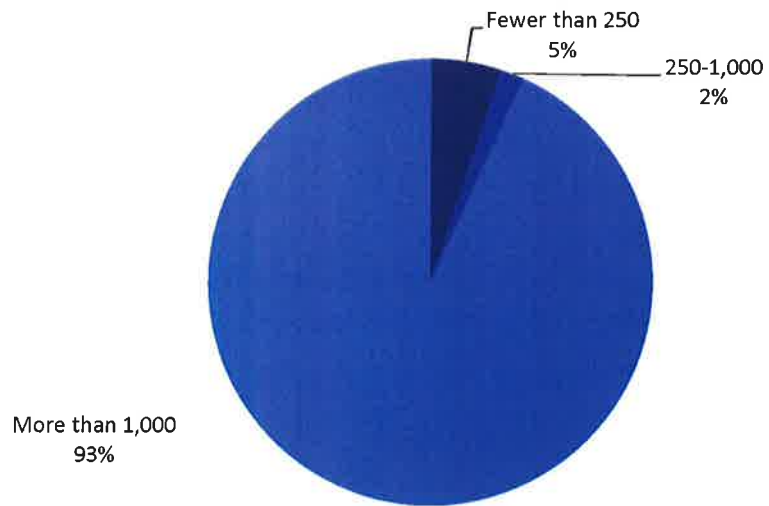
3. Are you established in Europe¹?



Value	Percent	Count
Yes	63.9%	39
No	36.1%	22
	Total	61

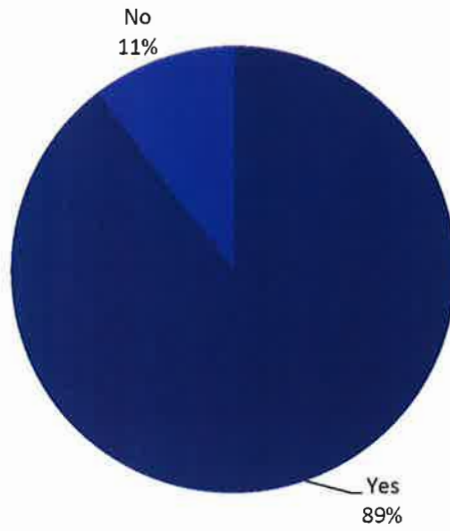
¹ Europe – refers to the European Economic Area's ('EEAs') 31 member states, which includes 28 European Union member states and Iceland, Liechtenstein and Norway.

4. How many people are employed by your company?



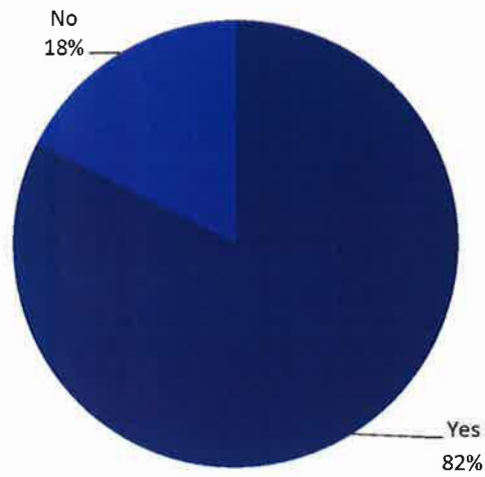
Value	Percent	Count
Fewer than 250	5.1%	3
250-1,000	1.7%	1
More than 1,000	93.2%	55
	Total	59

5. Does your company rely on standard contract clauses to transfer data from the EU to the United States?



Value	Percent	Count
Yes	89.5%	34
No	10.5%	4
	Total	38

6. Does your company rely on standard contract clauses to transfer data from the EU to countries other than the United States?



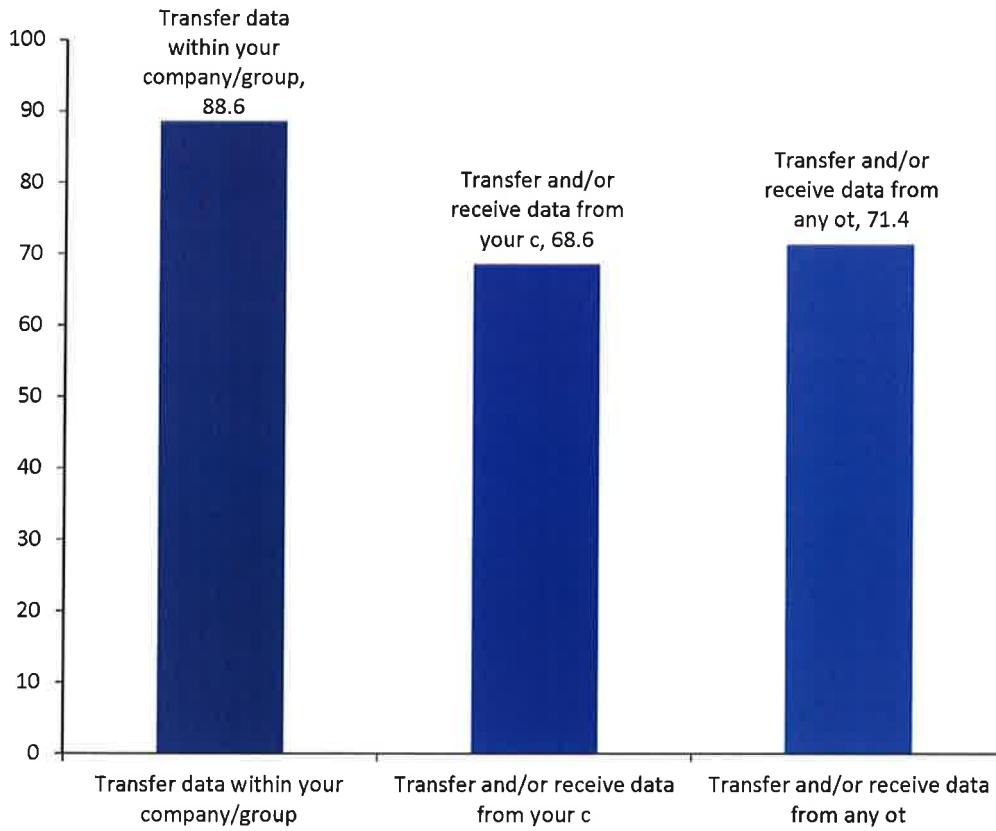
Value	Percent	Count
Yes	82.5%	33
No	17.5%	7
	Total	40

7. If the answer to 2 is yes, which countries / regions?

Count	Response
1	APAC
1	APAC, North and South America, EMEA
1	All countries and regions including APAC countries.
1	All countries around the world
1	All geos
1	All regions of the world and nearly every country across the globe.
1	Asia Africa
1	Asia, Latin America, Central Europe, Middle East, Africa
1	Asia-Pacific
1	Brazil
1	Brazil and South America
1	Eastern Europe, Asia, Latin America
1	For all transfers from the EEA to non-EEA countries. Where the transfer is intra-group, any country w/ business presence Where the transfer relates to customer data : SCCs between customers entities in India, Malaysia, Mexico, Panama and the US.
1	India
1	India, Asia
1	India, LATAM, other APAC, Australia
1	India/APAC

1	JAPAN
1	Japan and countries in Asia Pacific
1	Lots
1	Mainly Japan, and other countries/regions.
1	Primarily: Canada, Australia, India
1	Worldwide
1	all global regions
1	all regions
1	e.g. Singapore
1	global
1	inter alia: Canada, Japan, Australia, Japan
1	several

8. Does your company rely on standard contract clauses to:



Value	Percent	Count
Transfer data within your company/group	88.6%	31
Transfer and/or receive data from your customers	68.6%	24
Transfer and/or receive data from any other third parties	71.4%	25

9. Which standard contract clauses do you use?²

Value	Percent	Count
Controller-to-controller transfer clauses	69.4%	25
Controller-to-processor transfer clauses	86.1%	31

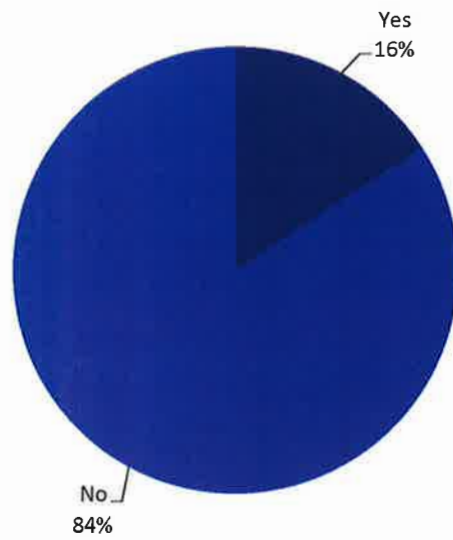
² The original question allowed users to only select one answer. The first 10 respondents answered: Controller-to-controller transfer clauses (3); and Controller-to-processor transfer clauses (7). After the question was updated to included multiple responses, the remaining 26 respondents answered: Controller-to-controller transfer clauses (22); and Controller-to-processor transfer clauses (24). The responses were added here and divided by the total number of respondents (36).

10. Optional question: Describe methods your company uses to ensure that third-party controllers or processors observe the terms of standard contract clauses?

Count	Response
1	Clauses in contract and audit as needed
1	Due diligence and audit
1	Etc
1	Guidelines, audits
1	Methods may include performing audits of the processors technical and organisational security measures and review of third party audit reports.
1	Part of usual third party vendor due diligence and verification
1	Pre-contract assessments, periodic reviews of controls.
1	Security reviews including audits and certifications. Robust contractual obligations.
1	We conduct periodic supplier risk assessments and data protection terms are reviewed as part of those supplier risk assessments.
1	We employ an extensive supplier review process to evaluate and help ensure the third party is able to meet the requirements of the SCCs and the terms of the agreement.
1	We perform routine audits, have strengthen our third party governance program and test their systems on a quarterly basis.
1	external audits, supplier code of conduct, pre-audit, hosting and approval committee, certificates etc.
1	internal or external audits
1	not applicable

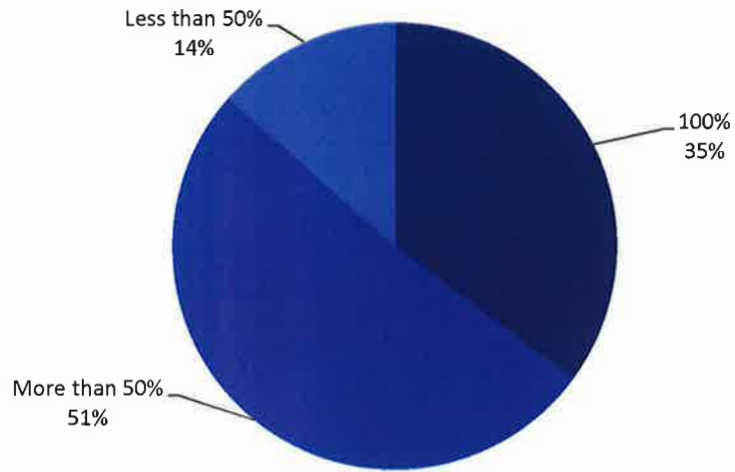
1	standard method
1	we execute the SCCs with them as part of our standard contract terms

11. Has your company's use of standard contract clauses ever been the subject of an audit by an EU Member State data protection authority?



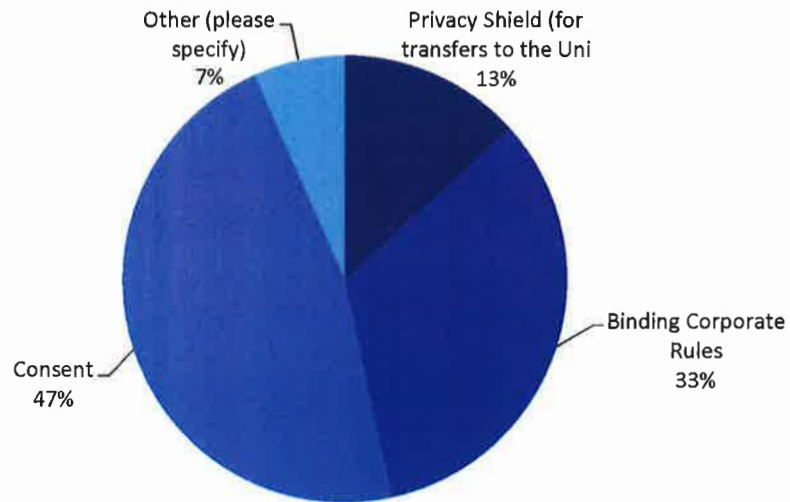
Value	Percent	Count
Yes	15.8%	6
No	84.2%	32
	Total	38

12. To what extent do you rely on standard contract clauses as opposed to other legal bases for data transfer – please quantify approximately (in %).



Value	Percent	Count
100%	35.1%	13
More than 50%	51.4%	19
Less than 50%	13.5%	5
	Total	37

13. If less than 100%, which other legal bases in addition to standard contract clauses do you use for transferring data from the EU?

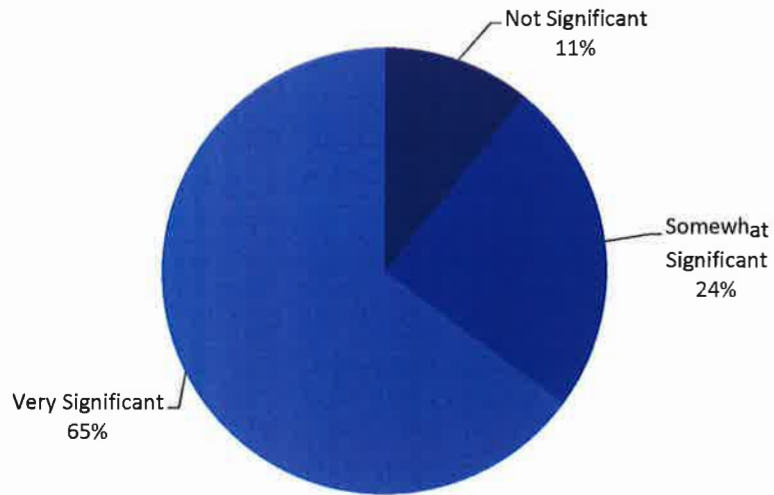


Value	Percent	Count
Privacy Shield (for transfers to the United States)	13.3%	2
Binding Corporate Rules	33.3%	5
Consent	46.7%	7
Other (please specify)	6.7%	1
	Total	15

Other (please specify)	Count
Consent, Contractual Necessity	1
Total	1

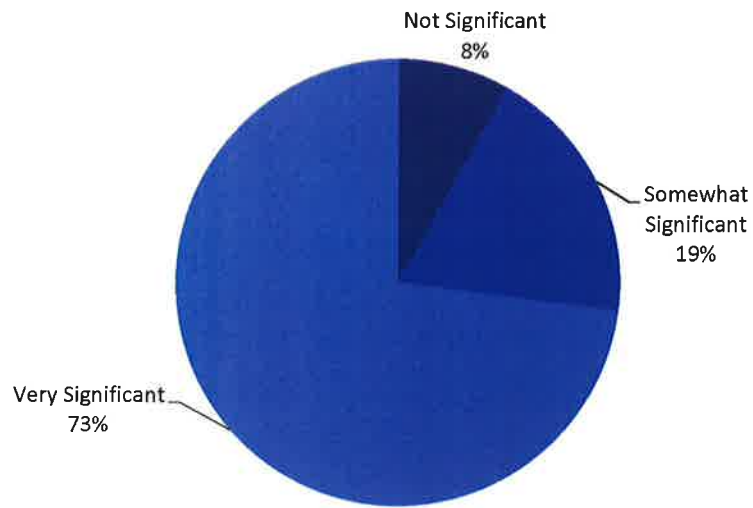
14. If standard clauses were no longer valid for transfers from the EU to the U.S. or other non-EU countries, would this be a significant impediment for your company

a. For the U.S. market?



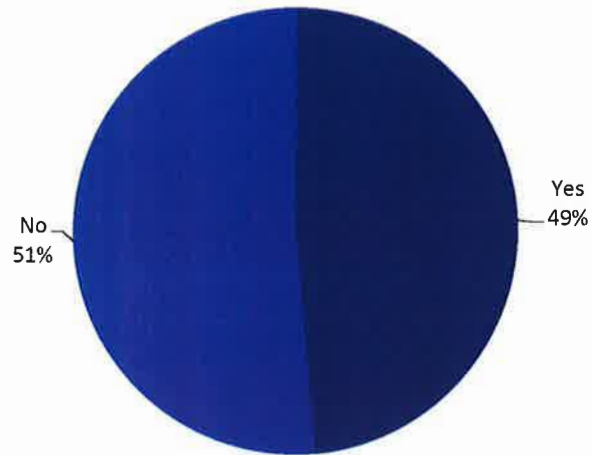
Value	Percent	Count
Not Significant	10.8%	4
Somewhat Significant	24.3%	9
Very Significant	64.9%	24
	Total	37

b. For markets other than the U.S.?



Value	Percent	Count
Not Significant	8.1%	3
Somewhat Significant	18.9%	7
Very Significant	73.0%	27
Total		37

c. Is the EU-U.S. Privacy Shield a useful alternative to standard clauses for transfers to the U.S.?



Value	Percent	Count
Yes	48.6%	18
No	51.4%	19
	Total	37

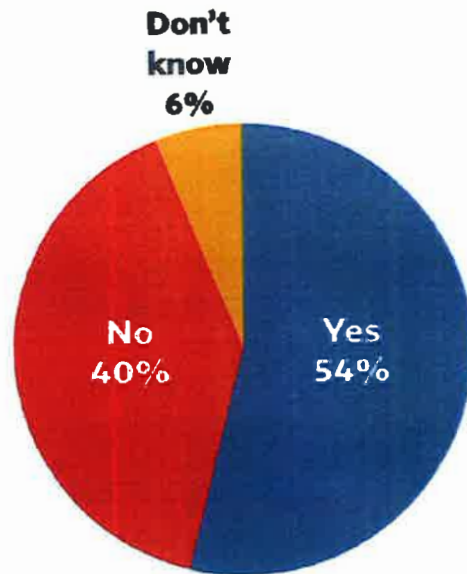


Cross Border Data Transfer

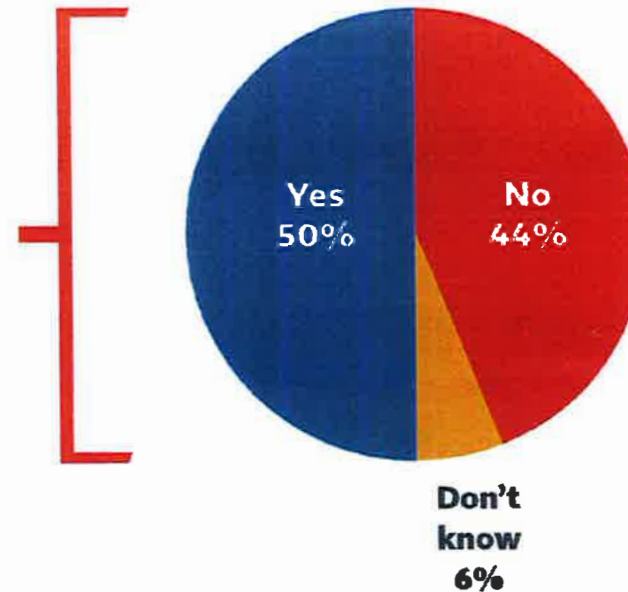
A bit over half of the organizations surveyed transfer data between the EU and the US

- In addition, half of those transferring certified under Safe Harbor in the past

Transfer Data From EU to US?



Certified Under Safe Harbor?



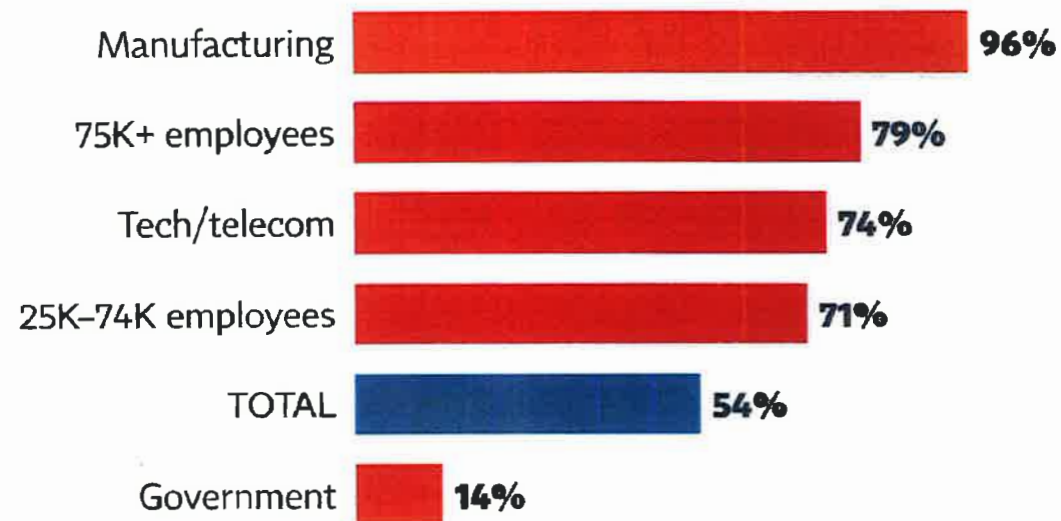
J1: Does your organization transfer personal information from the European Union to the United States?

J2: Did your company certify under Safe Harbor?

Manufacturing and tech firms are significantly more likely than average to transfer data across borders

- In addition, cross-border transfer is the norm for organizations with 25K employees or more

% Who Transfer Data From EU to US

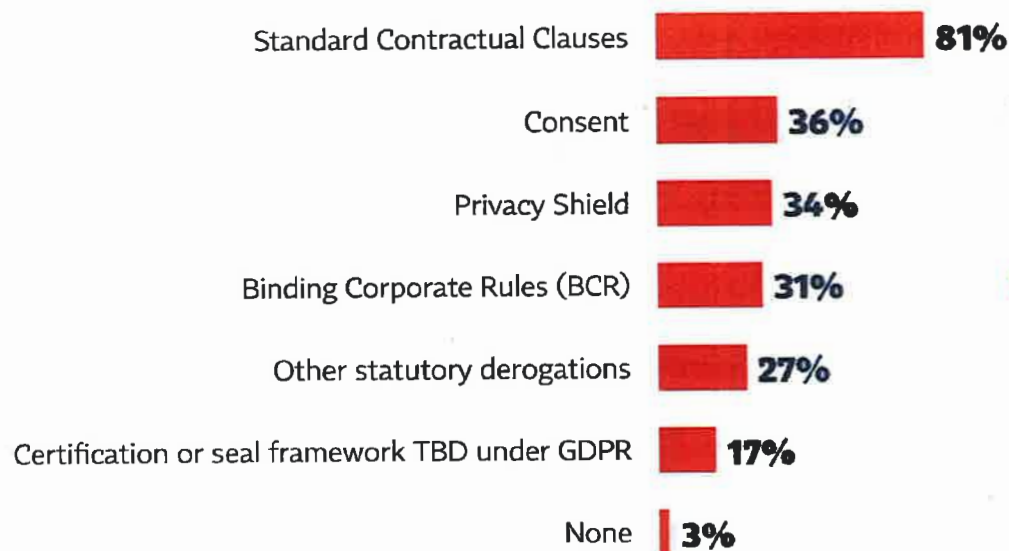


J1: Does your organization transfer personal information from the European Union to the United States?

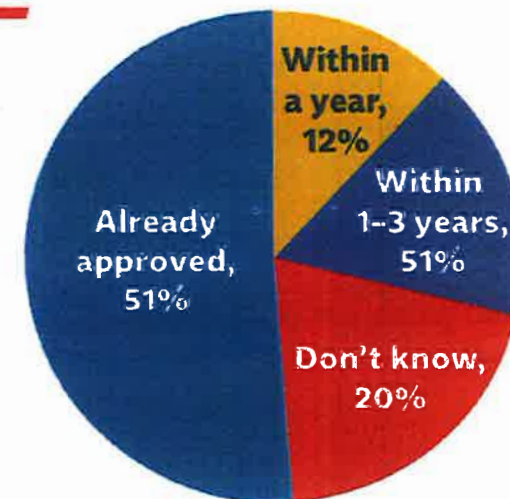
The vast majority of those transferring data rely on standard contractual clauses as the main mechanism

- However, about one-third rely, or intend to rely, on Privacy Shield or BCR (including 55% for BCR among those with 75K employees or more). And half of those say their BCR application has already been approved

Mechanism for Data Transfer, Among Those Who Transfer



Expected BCR Approval

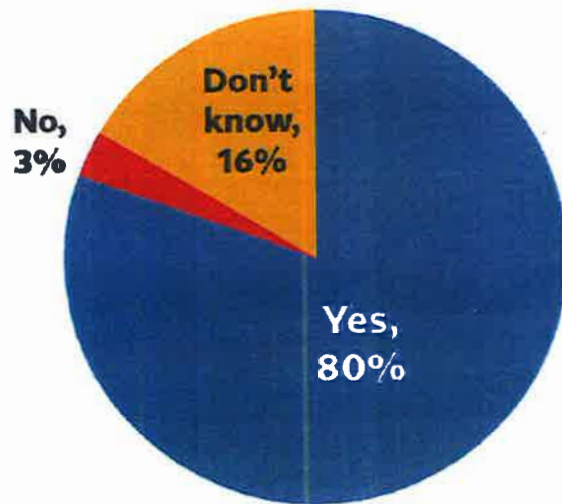


- J5: What mechanism(s) does your company intend to use to transmit data to the U.S?
 J6: When do you expect your BCR application to be approved?

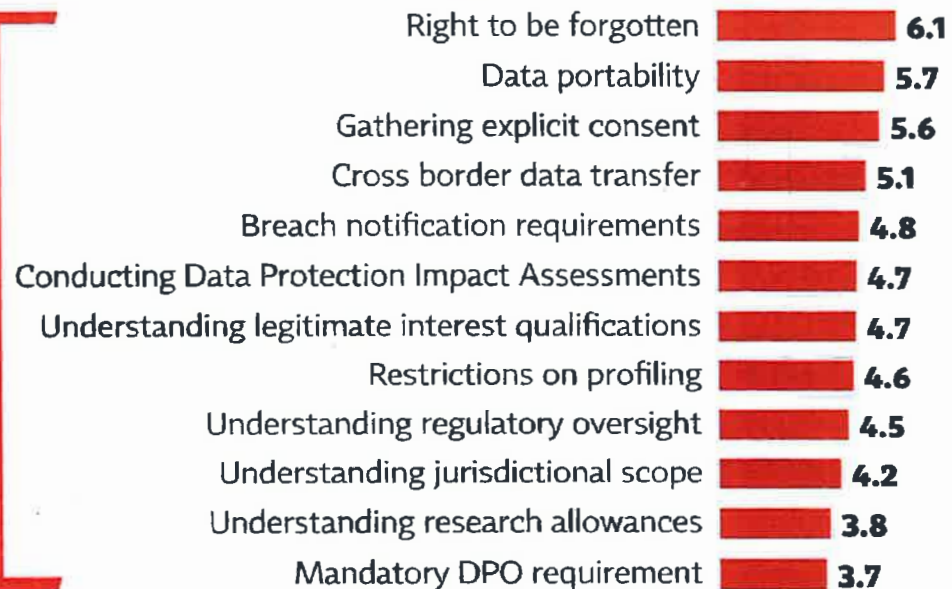
8 in 10 organizations who transfer data say they fall under GDPR

- Three aspects of GDPR are considered most difficult: right to be forgotten, plus data portability and explicit consent requirements

Whether Fall Under GDPR Scope, Among Those Who Transfer



GDPR Obligation Difficulty (Mean Score On 0-10 Scale: 0 = Not At All Difficult; 10 = Extremely Difficult)



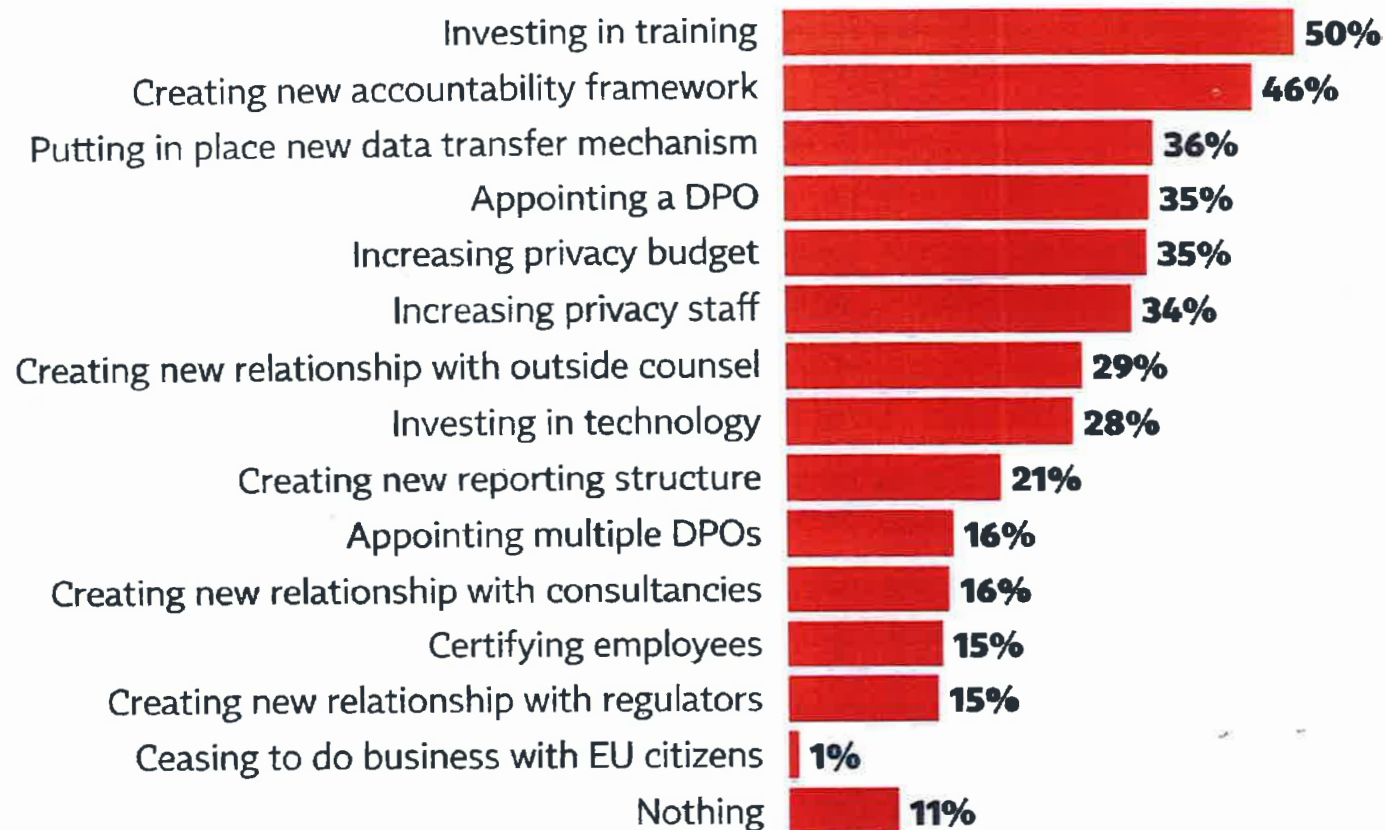
J7a: Does your organization fall under the scope of the General Data Protection Regulation (GDPR)?

J7b: Please rate each of the following legal obligations of the General Data Protection Regulation on a scale from 0-to-10

The most commonly taken steps to prepare for GDPR are developing training and accountability frameworks

- About a third each say they're preparing by boosting their privacy budget or privacy staff

Steps Being Taken To Prep for GDPR (Among Those Falling Under GDPR)

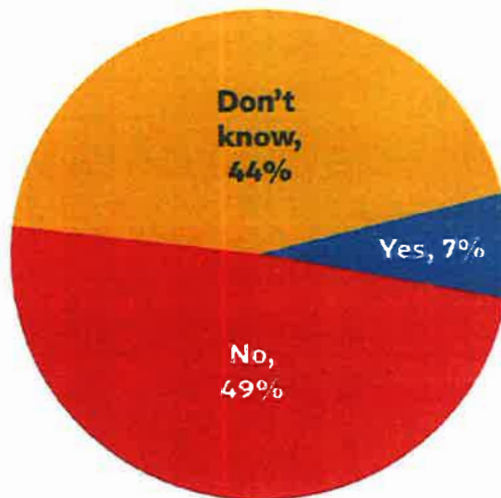


J8: What, if anything, is your organization doing to prepare for the GDPR?

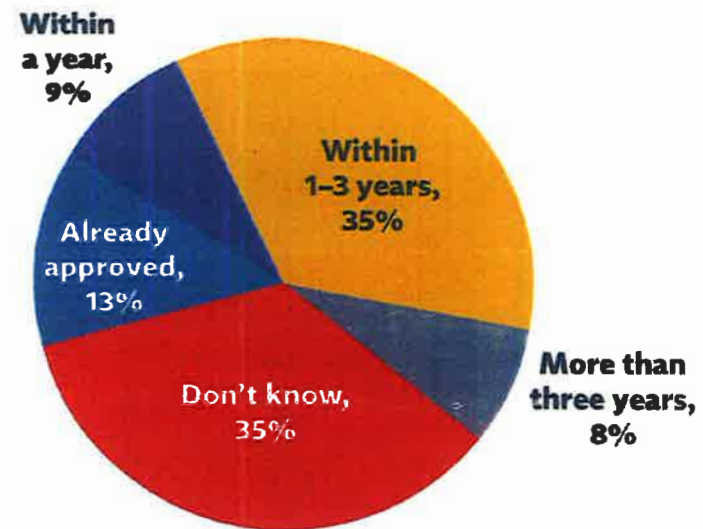
Very few organizations have definitive plans to apply for CBPR in the Asia Pacific region

- Among the few who do intend to apply, most don't expect approval until at least a year from now—or they are aren't sure

Will Apply for CBPR?



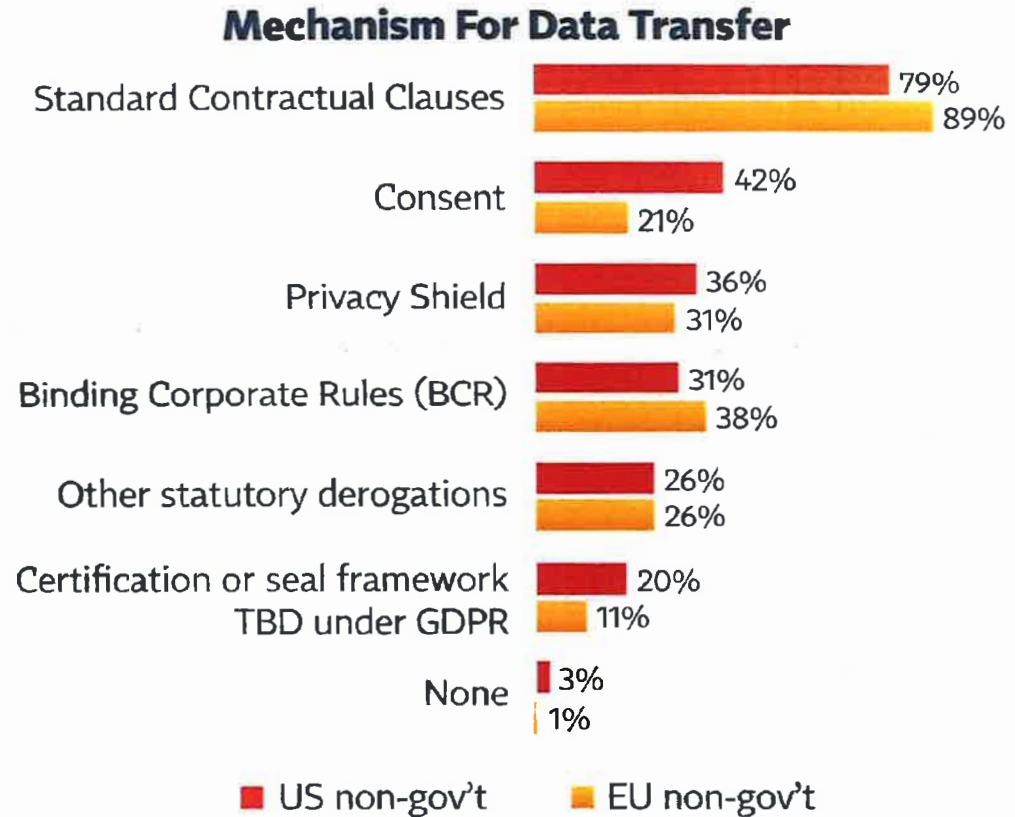
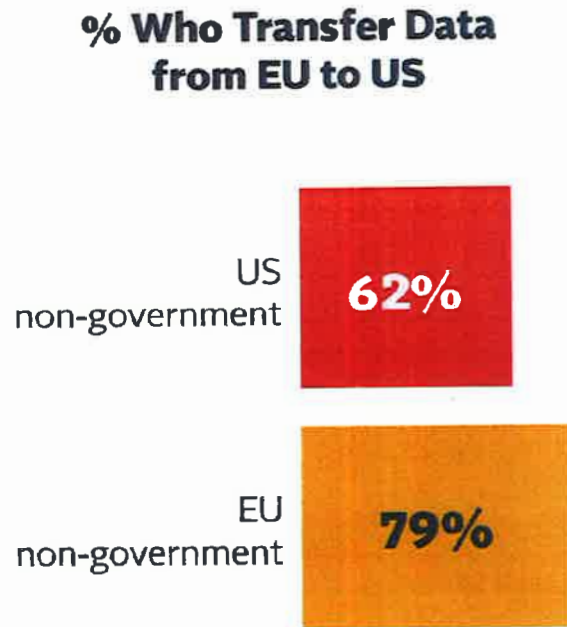
Expected CBPR Approval



J9: Will your organization apply for Cross Border Privacy Rules (CBPR) to transfer data in the APEC region?

J10: When do you expect your CBPR application to be approved?

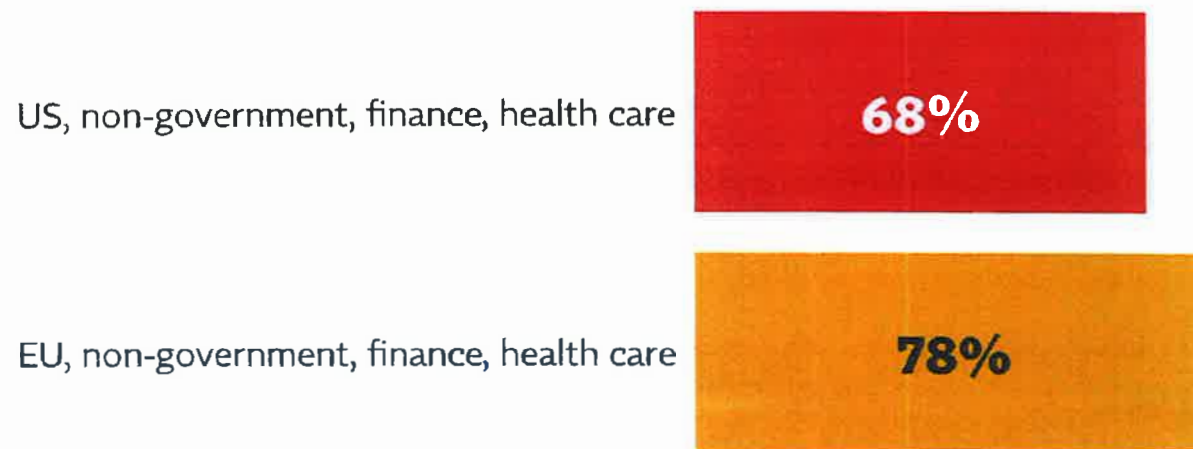
Looking specifically at non-government, EU firms are more likely than US to transfer data and use BCR



J1: Does your organization transfer personal information from the European Union to the United States?
 J5: What mechanism(s) does your company intend to use to transmit data to the U.S.?

EU firms are also more likely to transfer data when we exclude finance/health care, along with government

% Who Transfer Data from EU to US



J1: Does your organization transfer personal information from the European Union to the United States?

US firms were much more likely to be certified under Safe Harbor, but only 42% intend to use Privacy Shield

Safe Harbor and Mechanism for Data Transfer

	US w/o Gov't, Finance, Health	EU w/o Gov't, Finance, Health
Certified Under Safe Harbor	73%	37%
Mechanisms		
Standard Contractual Clauses	81%	92%
Privacy Shield	42%	32%
Consent	41%	16%
Binding Corporate Rules (BCR)	31%	31%
Other statutory derogations	25%	27%
Certification or seal framework TBD under GDPR	23%	10%

J2: Did your company certify under Safe Harbor?

J5: What mechanism(s) does your company intend to use to transmit data to the U.S.?

The gap between Safe Harbor and Privacy Shield is especially big for companies with 25K–75K employees

Safe Harbor and Mechanism for Data Transfer

	Employee Size, US and EU, Without Gov't, Finance, Health			
	Under 5K	5K–24.9K	25K–74.9K	75K+
Certified Under Safe Harbor	61%	59%	75%	65%
Mechanisms				
Standard Contractual Clauses	86%	78%	96%	78%
Privacy Shield	43%	44%	26%	43%
Consent	36%	44%	37%	24%
Binding Corporate Rules (BCR)	8%	29%	26%	53%
Other statutory derogations	36%	24%	26%	19%
Certification or seal framework TBD under GDPR	24%	22%	15%	18%

J2: Did your company certify under Safe Harbor?

J5: What mechanism(s) does your company intend to use to transmit data to the U.S.?

That gap is mostly a US phenomenon, with much higher numbers using Safe Harbor vs. Privacy Shield

Safe Harbor and Mechanism for Data Transfer

	Employee Size, US, Without Gov't, Finance, Health			
	Under 5K	5K-24.9K	25K-74.9K	75K+
Certified Under Safe Harbor	77%	69%	80%	67%
Mechanisms				
Standard Contractual Clauses	88%	69%	96%	75%
Privacy Shield	52%	41%	29%	47%
Consent	38%	55%	42%	28%
Binding Corporate Rules (BCR)	8%	28%	29%	52%
Other statutory derogations	34%	28%	25%	17%
Certification or seal framework TBD under GDPR	22%	31%	17%	20%

J2: Did your company certify under Safe Harbor?

J5: What mechanism(s) does your company intend to use to transmit data to the U.S.?

THE ECONOMIC IMPACT OF SOFTWARE

EUROPEAN UNION¹

Software is ubiquitous. It is at the heart of every aspect of modern life. We depend on software at the office, at school, at home, in our leisure time, when we travel, and when we communicate. Software helps us be more effective, more creative, and more efficient. BSA | The Software Alliance has commissioned this expert analysis by The Economist Intelligence Unit (EIU) on the economic contributions of the software industry in both the EU28 and its five biggest Member States: France, Germany, Italy, Spain, and the United Kingdom. The research findings provide important insights on how the European Union (EU) can take advantage of software's potential.

Software delivers a total value-added (direct, indirect, and induced)² GDP of €910 billion — over 7 percent of the EU28 total GDP. This contribution comes from all sectors and all levels of the economy: farming, manufacturing, services, education, health care.

Total* Value-Added GDP:
€910 billion

7.4% of GDP

Direct Value-Added GDP:
€249 billion

2% of GDP

JOBS

EMPLOYMENT

Direct:
3.1 million jobs
1.4% of total EU jobs

Total:*
11.6 million jobs
5.3% of total EU jobs

From software developers and web designers to futurists, project coordinators, administrative assistants, and accountants, software creates jobs for a wide variety of professionals in today's workplaces. These numbers capture jobs created directly by the software industry, as well as jobs the software industry supports through indirect and induced impacts.



WAGES

**Average Annual Wage
for Software industry:**
€45,333

by comparison... All industries: €33,790³ Service sector: €25,214⁴

The EU average wage for the software industry is 34 percent higher than the EU average wage and 80 percent higher than the EU average wage for the services sector.

Total annual wages paid by the software industry:
€139.2 billion



R&D

€12.7 billion
Software R&D expenditures⁵

7.3% of R&D expenditures
by business enterprise⁶

Software companies in the EU invest strongly in software R&D — almost €12.7 billion in 2013.

* direct, indirect, induced

¹ All data are from 2014 and were provided by EIU unless otherwise indicated.

² EU GDP data from Eurostat.

³ Eurostat: Mean annual earnings, Structure of earnings survey 2014.

⁴ Eurostat: Annual detailed enterprise statistics for services 2014.

⁵ Software R&D expenditures by business enterprise in 2013.

⁶ Software R&D expenditures by business enterprise in 2013, compared to total R&D expenditures by business enterprise.

Mr. Andrus Ansip
Vice President for the Digital Single Market
European Commission
Rue de la Loi / Wetstraat 200
1040 Brussels, Belgium

Mr. Günther H. Oettinger
European Commissioner for Digital Economy and Society
European Commission
Rue de la Loi / Wetstraat 200
1040 Brussels, Belgium

Brussels, 15th November 2016

RE: Future-proofing the EU Single Market by enabling the free flow of data

Dear Vice-President Ansip,
Dear Commissioner Oettinger,

The EU's most praised economic achievement is its Single Market where goods, services, people and capital can flow freely. The EU Single Market has attracted investment, boosted economic growth and allowed for European companies to scale-up freely. While more needs to be done to achieve its full benefits, the Single Market also needs to be future-proof and its principles need to be extended to the digital economy.

Unfortunately, unjustified data localisation requirements in some Member States are increasingly threatening to fragment the Single Market. These barriers undermine the competitiveness of a true Digital Single Market which could provide an estimated EUR 415 billion to the EU's GDP.¹

The economic benefits of free flow of data in the EU

As Europe's economy is undergoing a transformation to a data-driven economy, unjustified barriers to free flow of data need to be removed within the EU (and globally). This is in line with the recently adopted EU General Data Protection Regulation which clearly states that: "The proper functioning of the internal market requires that the free movement of personal data within the Union is not restricted or prohibited." Economically, the EU would gain an estimated EUR 8 billion annually if existing data localisation measures were removed.² Preventing EU Member States from imposing unjustified data localisation requirements would lead to a EUR 52 billion per

¹ Mapping the Cost of Non-Europe 2014-2019 – European Parliamentary Research Service (April 2015).

² European Commission's Inception Impact Assessment (October 2016).

year increase in economic activity in Europe or 0.37% of EU GDP.³ These gains will increase with the further digitisation of Europe's economy.

Unjustified data localisation puts a chill on innovation in Europe

The vast majority of today's national data localisation requirements relate to company data, tax data, book-keeping data, financial data, gambling data, and health data. Many data localisation requirements are also imposed in the area of public procurement at national and local level. Today all European companies are faced with a patchwork of national rules for the handling of their company data, such as invoices.⁴ These requirements constitute a significant barrier for small firms trying to do business in other EU Member States. Businesses operating in Europe, including SMEs, should be able to easily store, access and process their data in the Single Market without facing unnecessarily burdensome localisation requirements. The EU institutions must work to create a Single Market where SMEs can seamlessly scale-up and not be forced to store data in various Member State jurisdictions.

Where data is stored should be a matter of customer choice

Localisation mandates rarely find any valid public policy justification and prevent consumers and businesses from accessing new services and technology, drive up costs and stifle innovation. Importantly, data localisation measures actually weaken security protections as they make centralised data more vulnerable to attacks. While we respect the request of customers to store data in a certain jurisdiction, we believe that any data storage requirements should be based on customer choice, not government mandate.

Wide support for an EU ban on unjustified data localisation

Forced data localisation rules will not lead to better protection but to fragmentation, to the detriment of citizens, consumers, SMEs and society. Our views echo those of the European Parliament, which has openly called for a curb on forced data localisation.⁵ Furthermore, 14 EU Member States have urged that "data can move freely across borders ... by removing all unjustified barriers to the free flow of data."⁶ We support this call for the European Commission to confirm, through a Regulation, the general principle of the free flow of data and remove unjustified data location rules across the EU. Member States should be allowed to localise data only in very exceptional and pre-determined cases. The burden should then be on the relevant EU Member States to notify and allow for European Commission scrutiny prior to any decision in order to

³ Forthcoming study by the think tank ECIPE.

⁴ [New research: Conflicting company rules inhibit intra-EU business](#) (February 2016).

⁵ [The European Parliament Recommendations](#) (June 2016) "recognise that data flows are a crucial driver of the services economy, an essential element of the global value chain of traditional manufacturing companies and critical for the development of the Digital Single Market; to seek, therefore, a comprehensive prohibition of forced data localisation requirements ... to the extent possible within and outside Europe."

⁶ Joint letter from Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Luxembourg, Poland, Slovenia, Sweden and United Kingdom in preparation of the Transport, Telecommunications and Energy and Competitiveness Council meetings (26 May 2016).

allow for verification of their compatibility with EU law, including in the area of national public procurement, as well as the EU's obligations under international agreements and treaties.

We thank you for your important efforts to future-proof the EU Single Market. We remain at your disposal to discuss and support this proposal further.

Kind regards,

ACT, Application Developers Alliance, AmCham EU, BSA, CCIA Europe, COCIR, DIGITALEUROPE, EACA, eCommerce Europe, EDiMA, EMOTA, EPC, EuroISPA, FEDMA, FENCA, IAB Europe, ISFE, JBCE, TABC, and WFA.



cc.

Commissioner Elżbieta Bieńkowska

Commissioner Věra Jourová

Director-General Roberto Viola

Director-General Tiina Astola

Head of Cabinet Juhan Lepassaar

Head of Cabinet Michael Hager

Head of Cabinet Renate Nikolay

Member of Cabinet Antoine Colombani

Member of Cabinet Pauline Rouch

INFOBRIEF |

EMC²

The **DIGITAL UNIVERSE** of OPPORTUNITIES

EMC DIGITAL
UNIVERSE

RICH DATA
& the Increasing
Value of the
INTERNET OF THINGS

GET STARTED



APRIL 2014

With Research
& Analysis By



The Digital Universe Is Huge —And Growing Exponentially

EMC DIGITAL
UNIVERSE
INFOBRIEF

With Research & Analysis by IDC



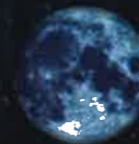
4.4

ZETTABYTES

2013

If the Digital Universe were represented by the memory in a stack of tablets, in **2013** it would have stretched two-thirds the way to the Moon*

In 2013, there were almost as many bits in the Digital Universe as stars in the physical universe



44

ZETTABYTES

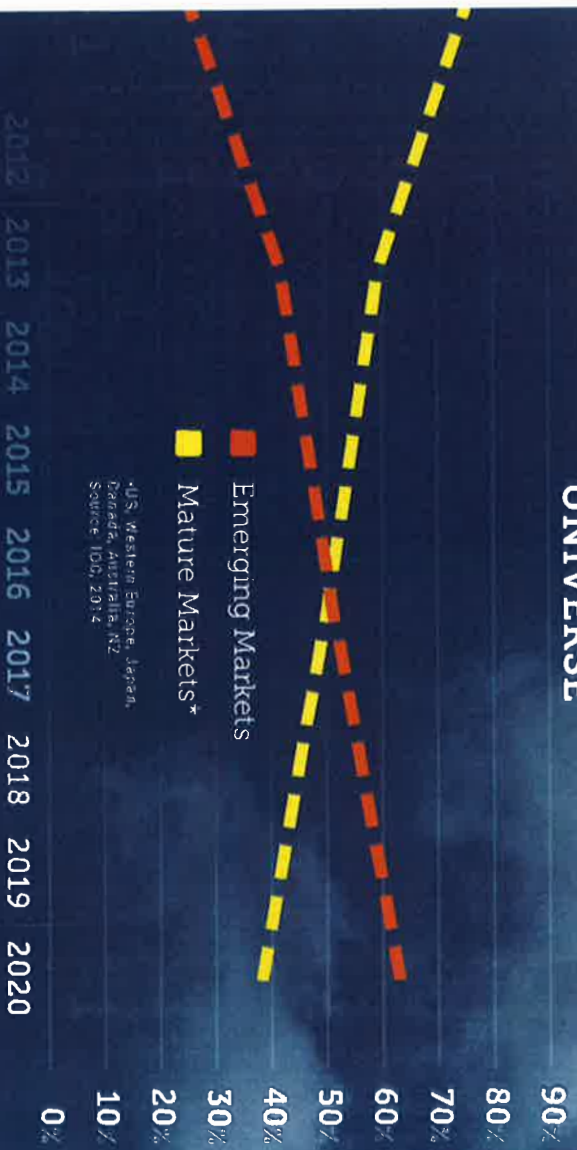
2020

By **2020**, there would be 6.6 stacks from the Earth to the Moon*

Source: IDC, 2014
* iPad Air – 0.29" thick, 128 GB

Emerging Markets Will Surpass Mature Markets by 2017

% of TOTAL DIGITAL UNIVERSE



*U.S., Western Europe, Japan, Canada, Australia, NZ
Source: IDC, 2014

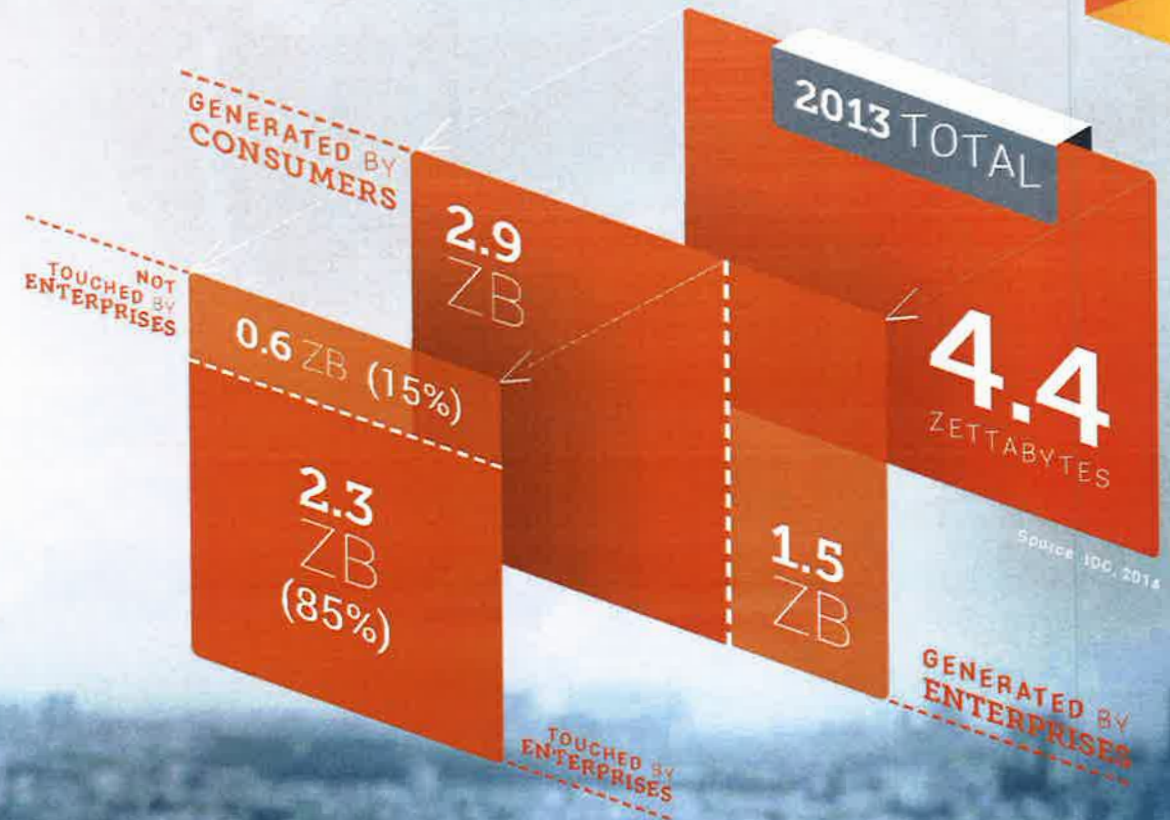


EMC DIGITAL UNIVERSE INTELLIGENCE
With Research & Analysis by IDC

In **2013**, mature markets represented **60%** of the Digital Universe

By **2020**, that will flip-flop, with emerging markets (including China, Brazil, India, Russia, and Mexico) representing **60%**

2/3 of DU Is Created by Consumers,
but Enterprises
Are Responsible
for 85% of This



Source: IDC, 2014

The Internet of Things Is Exploding

The "Internet of Things" is fueled as analog functions managing the physical world migrate to digital functions

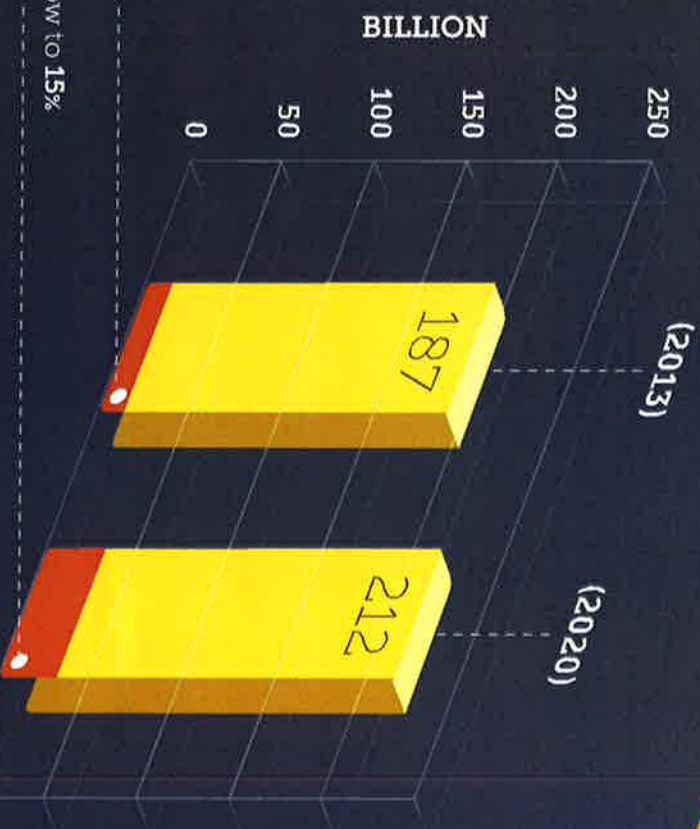
It consists of adding computerization, software, and intelligence to things as varied as cars, toys, airplanes, dishwashers, turbines, and dog collars

While not all "things" are connected to the Internet, **20 billion** of them were in 2013, and **32 billion** will be by 2020

Total
Number of
Connectable
Things

In **2013**, connected "things" were **7%** of the total
By **2020**, that number will grow to **15%**

Source: IDC, 2014

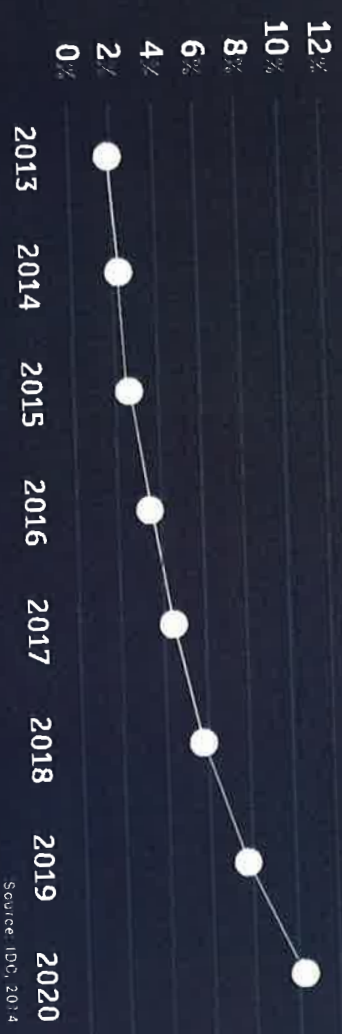


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UNIVERSE
INFORMRIEF
With Research & Analysis by IDC

The Internet of Things Will Contribute an **Increasingly Large** Amount to the Digital Universe

The network connecting devices in the Internet of Things is characterized by automatic provisioning, management, and technology

IoT Embedded Systems as % of the DU



Source: IDC, 2014

It includes:

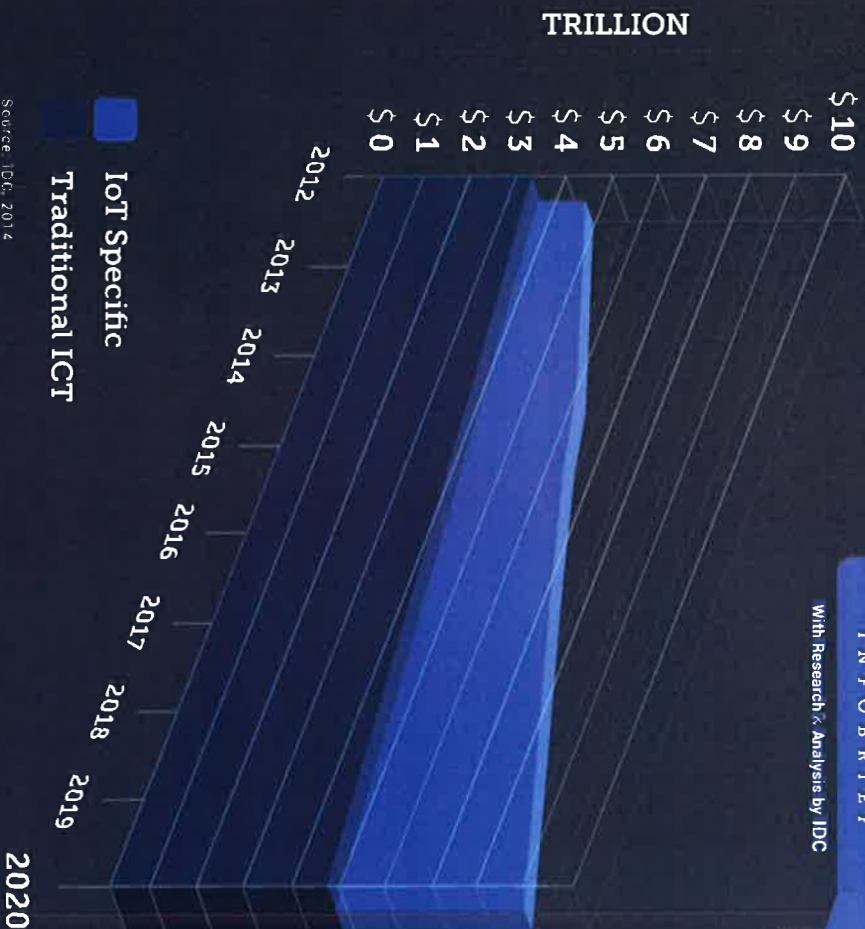
- Intelligent systems and devices
- Connectivity enablement
- Platforms for device, network, and application enablement
- Analytics and social business
- Vertical industry solutions

The Internet of Things Will **Subsume** the Information and Communication Technology Industry

Over time, the Internet of Things (IoT) will grow to subsume the traditional Information and Communication Technology (ICT) industry

IoT is growing over three times as fast as traditional ICT, and by 2020 will nearly equal all other ICT spending

Buyers and users of IoT technology and services will realize huge business benefits

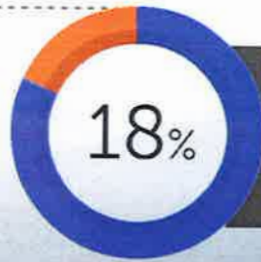


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INFORRETF
With Research & Analysis by IDC

Source: IDC, 2014

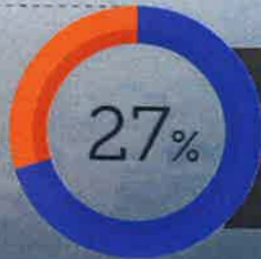
Mobility Is a Key Driver of the DU

2014



Mobile "Connected Things"
Generate of **18%** of the
Digital Universe

2020



In 2020,
the figure
grows to **27%**

- Generated by Mobile "Connected Things"
- Rest of Digital Universe

Mobile "things" include devices such as RFID tags, GPS devices, smart cards, cars, toys, and even dog collars

Source: IDC, 2014

5 Ways IoT Will Create New Opportunities

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UNIVERSE
INFORRIET

With Research & Analysis by IDC



New business models

The IoT will help companies create new value streams for customers, speed time to market, and respond more rapidly to customer needs.



Real-time information on mission-critical systems

Enterprises can capture more data about processes and products more quickly and radically improve market agility.



Diversification of revenue streams

The IoT can help companies monetize additional services on top of traditional lines of business.



Global visibility

The IoT will make it easier for enterprises to see inside the business, including tracking from one end of the supply chain to the other, which will lower the cost of doing business in far-flung locales.



Efficient, intelligent operations

Access to information from autonomous endpoints will allow organizations to make on-the-fly decisions on pricing, logistics, and sales and support deployment.

Five Criteria to Extract Maximum Value from Data

The Digital Universe is too big and too varied for companies to make sense of all the data it contains. Fortunately, that isn't necessary. Instead, they need to target the highest value (i.e., "target-rich") data. IDC defines target-rich data using the following criteria:



Easy to access.

Can you obtain the data, or is it hopelessly locked away on end-user PCs, shuttling about on closed-end data processing systems, or trapped in proprietary embedded systems?



Real-time.

Is the data available in real-time, or does much of it come too late to drive real-time decisions and actions?



Footprint.

Could top-notch analysis of this data affect a lot of people, major parts of the organization, or lots of customers?



Transformative.

Could this kind of data, properly analyzed and acted upon, actually change a company or society in a meaningful way?



Intersection synergy.

Could this kind of data have more than one of the above attributes?

High-Value Data Is a Manageable Subset of the Total

1.5%

2014

The size, diversity, and rapid growth of the Digital Universe can be daunting. Companies face the challenge of implementing predictive analytics, self-service business intelligence and analytics, and easy-to-use tools for data discovery and real-time decision making

The good news: companies don't have to wade through the vastness of the **entire** Digital Universe; they can find the best opportunities by focusing on the highest-value, target-rich data

At **1.5%** of the total, target-rich data is a much more manageable area of discovery

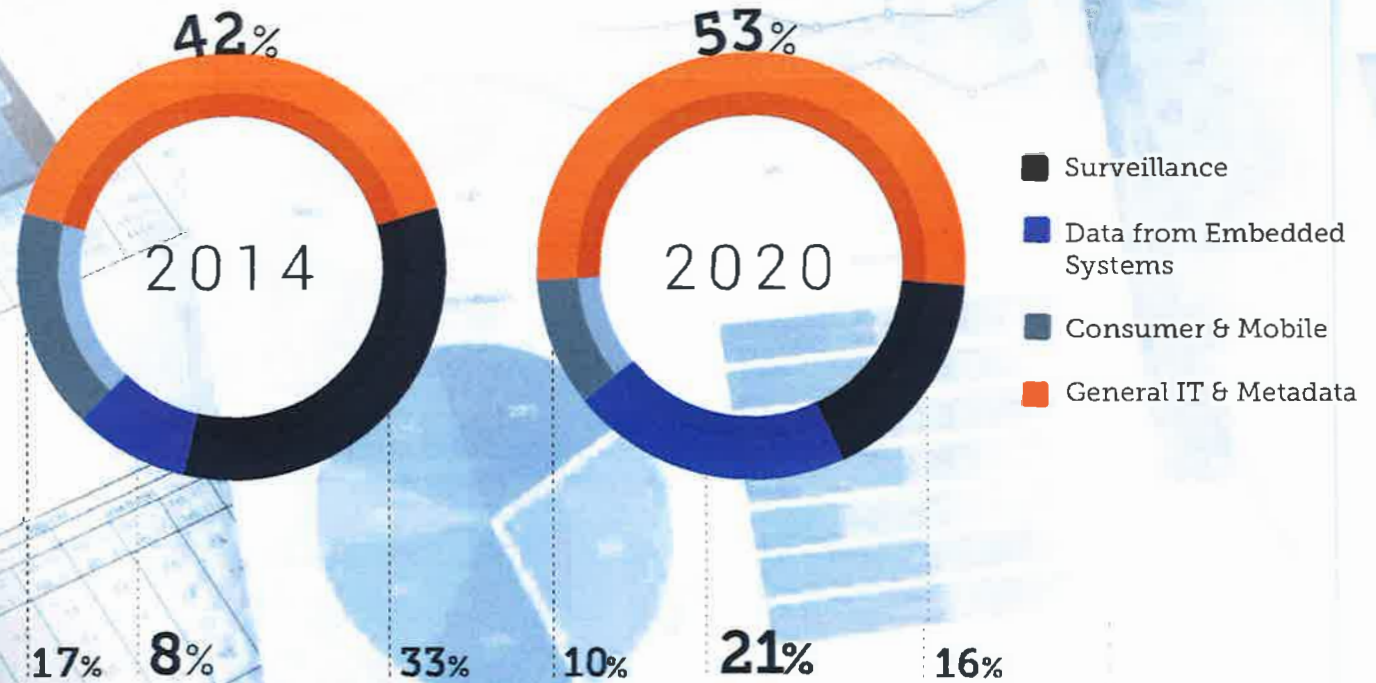
Source: IDC, 2014

Data from Embedded Systems Will Represent a Larger Percentage of "Target-Rich" Data

General IT and metadata make up the largest portion of "target rich" data and will continue to grow as Big Data projects expand and the base of metadata grows

The biggest growth is data from embedded systems, fueled by growth of the Internet of Things

The biggest decline is surveillance as the analog-to-digital transition in surveillance winds down



Source: IDC, 2014

Information Security: Much of the Data that Needs to Be Protected Is Not Yet Protected

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UNIVERSE
INFODRIEF
With Research & Analysis by IDC

More than half of the information in the Digital Universe that needs protection is **not being protected**



Portion of DU Not Needing Protection

57%

Portion of DU Needing Protection

43%

EXAMPLES:

- Camera phone photos
- Digital video streaming
- Public website content
- Open-source data

EXAMPLES:

- Corporate financial data
- Personally identifiable information (PII)
- Medical records
- User account information



Portion Protected

48%

Portion Not Protected

52%

Source: IDC, 2014



Advanced Analytics



Organization of Data: Few Organizations are at the Top of Analytics Maturity

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IN F O R B I E F

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Fewer than 1% of enterprises have achieved the highest level of Big Data and analytic usage

Big Data tends to be unstructured (e.g., in documents and text files), diversely formatted, of uncertain accuracy and unpredictable value, and often demands real-time attention

To maximize Big Data, organizations must implement new technologies and processes to change today's inflexible data structures to more egalitarian and flexible data "lakes"



Source: IDC, 2014

Talent Pool: IT Pros Will Shoulder a Greater Storage Burden

While much of the IoT will be self-service and self-supported, someone still needs to architect the data stores, answer helpdesk calls, and maintain the data farms

More importantly, IT skills and expertise need to be upgraded to handle new data sources and formats, and the new technologies of today

230
GB
PER
IT PRO

28
MILLION
IT PROS
WORLDWIDE



2014

1,231
GB
PER
IT PRO

36
MILLION
IT PROS
WORLDWIDE



2020

EMC DIGITAL
UNIVERSE
INFO BRIEF

With Research & Analysis by IDC

Source: IDC, 2014

Three Steps All Enterprises Must Take

EMC DIGITAL
UNIVERSE
INFORMATION
With Research & Analysis by IDC

Many of the biggest challenges posed by the digital universe are organizational. Three steps organizations should take to survive and thrive in the new era are:



Define and implement an enterprise-wide data **governance policy.**

Put in place a central governance policy to determine who owns the data, who has the right to access it, where is the data, and what are the compliance, privacy, security, and other risk factors associated with the data.



Assess and select the right **software tools.**

To manage the data deluge, you must choose and deploy the right next-generation software tools for data cleaning, crunching, and consumption, and seamlessly integrate them with legacy systems.



Design and execute a plan for acquiring the required **skills and talent.**

Define the skills and expertise you need today and will need tomorrow and establish the right processes, programs, and incentives to upgrade your workforce.

Methodology

This is the seventh time IDC has conducted the Digital Universe study for EMC. It was—and still is—the only study to estimate and forecast the amount of digital data created annually. It has used the same methodology since its inception, allowing the size of the Digital Universe to be traced all the way back to 2005, when “only” 132 exabytes of data were created and replicated.

Our basic approach to sizing the Digital Universe is to:

- Develop a forecast for the installed base of any of 40 or so classes of device or application that could capture or create digital information.
- Estimate how many units of information—files, images, songs, minutes of video, calls per capita, packets of information—were created in a year.
- Convert the units of information to megabytes using assumptions about resolutions, compression, and usage.
- Estimate the number of times a unit of information might be replicated, either to share or store. Much of this information is part of IDC’s ongoing research.

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INFORMATION

With Research & Analysis by IDC

AVAILABLE STORAGE

IDC routinely tracks the terabytes of disk storage shipped each year by region, media, and application.

To determine available storage on hard drives, IDC storage analysts estimated storage utilization on capacity shipped in previous years and added that to the current-year shipments.

For optical and nonvolatile flash memory, we developed installed capacity ratios per device and algorithms to calculate capacity utilization and overwriting. In optical, we found there was much more prerecorded storage than storage that was overwritten by users.





February 16, 2016

The EU-U.S. Privacy Shield: What's at Stake

On October 6, 2015, the Court of Justice of the European Union (CJEU) effectively invalidated the Safe Harbor Framework, which for 15 years had enabled thousands of companies to provide data services for their customers and to conduct their own operations. Since that time, and building on progress made over the preceding two years, EU and U.S. negotiators worked to reach a resolution on a new data transfer mechanism. On February 2, 2016, they reached a deal called the EU-U.S. Privacy Shield. The agreement helps preserve the largest trading relationship in the world, which is valued at half a trillion dollars of commerce annually, represents half of all U.S. investments abroad, and directly employs 3.5 million Americans.

However, the agreement faces a stringent, months-long approval process involving reviews by stakeholders across the EU and its Member States. The aim of this document is to help stakeholders better understand the economic impacts and consequences of a world without a durable EU-U.S. data transfer mechanism, focusing on the impacts to global trade, Member State economies, and thousands of companies' operations.

Data Flows are Essential to the EU-U.S. Trade Relationship

- Cross-border data flows between the United States and Europe are the highest in the world, 50 percent higher than data flows between the United States and Asia, and almost double the data flows between the United States and Latin America, according to the [Brookings Institution](#).
- 51 percent of U.S. firms that relied on the Safe Harbor Framework did so in order to process data on European employees - for example, transferring the personnel files of overseas workers to the United States for human resource purposes - and most of these firms are in traditional industries.
- In 2012, the United States exported \$140.6 billion worth of digitally deliverable services to the EU and imported \$86.3 billion worth of such services.
- In 2011, the supply of digitally deliverable services through U.S. affiliates in Europe was worth \$31.2 billion, while Europe supplied \$21.5 billion worth of digitally deliverable services through U.S. affiliates.
- UNCTAD estimates that about half of all services trade is enabled by the ICT sector, including cross-border flow of data. Applied to the EU, this would mean about \$600 billion (€465 billion) could depend on the openness of the digital economy (nearly six times total EU automotive exports).

Potential Macroeconomic Costs of Disruption

- If services trade and cross-border data flows are seriously disrupted - for example, if Europe's regulators and courts refuse to recognize binding corporate rules (BCRs), model contract clauses (MCCs), and the EU-U.S. Privacy Shield - the [negative impact](#) on EU GDP could reach -0.8 to -1.3 percent. This is roughly equivalent to three to four times the economic decline that Europe experienced during the 2012 euro crisis.



February 16, 2016

- EU services exports to the United States would be expected to drop by -6.7 percent due to loss of competitiveness, while EU manufacturing exports to the United States could decrease by up to 11 percent, depending on the industry.
- The direct welfare effects in such a scenario for consumers would be equivalent to a loss of \$102-170 billion (€78-131 billion), which is up to \$338 (€260) per EU citizen, or \$1,353 (€1,041) for a household of four people.

Examples of impacts on companies [if no legal basis exists to transfer data from Europe]

- EU-based online advertising firms that send data to U.S. partners to generate ads or to draft email marketing campaigns may no longer be able to do so.
- Business-to-business software providers may no longer be able to process the financial, tax, and contact data of partner European small and medium-sized enterprises (SMEs).
- U.S.-based banks may no longer be able to lend in Europe because they are unable to access the data needed to manage their risk profiles.
- Insurance companies may not be able to write new policies in European or U.S. markets without access to the data and the digital documents of their policyholders.
- U.S.-based industrial design firms may no longer be able to license their products to European manufacturers, because they will be unable to easily send schematics across borders.
- Online communities of European coders collaborating with others outside of the EU may no longer be able to write open-source software, where the code is hosted on U.S. servers.
- Business-to-consumer "distance-learning" companies based in the United States may no longer be able to authenticate the contact and payment information of Europeans who subscribe to online training courses.
- Business-to-consumer travel and tourism companies based in the United States may be unable to receive flight itineraries and hotel reservations of European customers booking through their EU subsidiaries.
- U.S.-based clinical software firms may no longer be able to integrate reports from hospitals, universities, physicians' offices, and clinical research organizations on medical device trials being held in the EU.
- Identity document authenticators based in the United States may not be able to assist European immigration or law enforcement officers seeking to test passports they have scanned for additional accuracy.

About ITI. The Information Technology Industry Council (ITI) is the global voice of the tech sector, celebrating its 100th year in 2016 as the premier advocacy and policy organization for the world's leading innovation companies. In both the U.S. and in countries around the world, ITI navigates the relationships between policymakers, companies, and non-governmental organizations, providing creative solutions that advance the development and use of technology around the world. Visit www.itic.org to learn more and follow us on Twitter for the latest ITI news [@ITITechTweets](https://twitter.com/ITITechTweets).

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